Question 1: 12 Points

Use mathematical induction to show that for any positive integer n, $6^n - 1$ is divisible by 5.

or,

Use mathematical induction to show that $1 + 2^1 + 2^2 + 2^3 + \ldots + 2^n = 2^{n+1} - 1$

Question 2: 8 Points

Find $\displaystyle\sum_{i=1}^{5}(2+3i) =$?